

REMARKS

The Office action of June 1, 2009, has been carefully considered.

Objection has been raised to the disclosure on the basis of the use of the term "reference 1" on page 2 of the specification. The specification has now been amended to indicate that patent reference 1 refers to JP-A-2000-042438, as was noted in the following paragraph of the specification.

The specification has also been amended to change the title to "Crushing Apparatus" and to provide a reference to the prior PCT application.

Claims 1-12 have been rejected under 35 USC 112, 2nd paragraph, as being indefinite on a number of grounds. The claims have now been extensively amended in order to correct the objections raised in the Office action, and withdrawal of this rejection is requested.

Claims 1-12 have been rejected under 35 USC 102(b) as anticipated by JP 2003-71307, JP 05-220375 or JP 08-60578.

In addition to the amendments noted above to overcome the objections under 35 USC 112, 2nd paragraph, Claim 1 has now been amended to incorporate the recitations of Claim 3 which has been canceled, and Claim 2 has been placed in independent form. Further, new Claims 13-17 have been added to the application, corresponding to Claims 4, 5, 6, 7 and 12, respectively, but depending from Claim 2, and new Claims 18 and 19 have been added in connection with the amendments to Claims 1 and 2, and are directed to an arrangement of a plurality of the through holes.

Applicants note that the Japanese references cited against Claims 1-12 were all cited in the PCT Search Report as being "Y" level references against Claims 1 and 2 (effectively corresponding to an obviousness rejection), but

only "A" level references against Claims 3-12, effectively designating state of the art references not sufficient to support a rejection. Accordingly, Applicants submit that none of these references discloses or suggests the guide disk from claim 3 now recited in Claim 1.

With regard to Claim 2, none of the cited references discloses or suggests that "a direction of the blade face of the sub-blade relative to the blade face of the preceding blade immediately therebefore can be adjusted to any of different directions."

JP 2003-71307 and JP 05-220375 do not disclose a detachable sub-blade. In JP 08-60578, as shown in Figures 1 and 2, each of the disks 12 and 13 on opposite sides of a runner 11 (corresponding to a rotating disk of the claimed invention) are divided into plural segments in the circumferential direction. Each segment is secured to the runner 11 by means of a bolt 20. However, this reference relates to a crushing apparatus called a "disk mill" in which the material is supplied between disks 12 and 13 (the rotational side) and disks 6 and 7 (the fixed side). A plurality of grooves (blades) are formed in the surface of the disks, so that the grooves or blades apply a shearing force to the material.

In contrast, the crushing apparatus of the invention is constructed and arranged such that the rotating disk generates a circulating or a swirling flow of air which enables production of a vacuum causing the material to be crushed.

Moreover, although each of the disk segments of disks 12 and 14 of JP 08-60578 can be replaced with another disk, it is not possible to adjust the direction of the disk segments relative runner 11.

Withdrawal of this rejection is requested.

Claims 1-12 have also been rejected under 35 USC 102(b) as anticipated by Hopkins, Kelsey, or Rohrbach.

The Hopkins reference is directed to a device for blending liquids, in which the liquids enter the device by way of an inlet neck 38, are acted upon by an impulse wheel 35, flow from a central opening 37 into a mill housing 10 where the liquids are acted upon by saws 25, and finally, are discharged from outlet pipe 39. The apparatus disclosed by Hopkins does not disclose at least one blade projecting from the rotating disk of Claims 1 and 2, as amended, and the guide disk of Claim 1 and the detachable sub-blade of new Claim 2 are not disclosed or suggested by this reference.

According to a second embodiment shown in Figure 3 of Kelsey, a particulate material is fed into a mill from a tube 55, rotated by impellers 56, crushed within spaces defined a plurality of disks 58, and are discharged from a discharge launder 66. Although each of the disks 58 has openings which allow the material to pass therethrough, Kelsey also does not disclose at least one blade projecting from the rotating disk, as recited by amended Claims 1 and 2. Moreover, the guide disks of amended Claim 1 and the detachable sub-blade of amended Claim 2 are not disclosed or suggested by this reference.

Rohrbach discloses a series of impact wheels 36-86, each having blades 87 (Figure 4) or 89, or blades similar to these blades. Uppermost wheel 36 is shown in Figure 3. A material is discharged into the mill via an inlet funnel 26, moved into a housing 65 via an outlet 42, crushed by impact wheel 36, moves downward via a transition opening 66, crushed by impact wheel 64 positioned on the lower side, crushed further by impact wheels positioned on the lower side via a transition opening similar to opening 66, and finally discharged into a discharge conduit 1 by the action of a

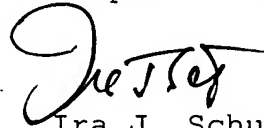
propeller 96. Rohrbach does not, however, disclose at least one blade projecting from the rotating disk as recited by amended Claims 1 and 2, and the guide disk of amended Claim 1 and the detachable sub-blade of amended Claim 2 are not disclosed or suggested in this reference.

Withdrawal of this rejection is requested.

Finally, Applicants submit herewith an Office Action received in the corresponding Japanese patent application, an English translation of the Office Action, a Form PTO-1449 listing the cited references and copies of the references. As this Office action has a mailing date of July 14, 2009, the references have been known to Applicants for less than three months.

In view of the foregoing amendments and remarks, Applicants submit that the present application is now in condition for allowance. An early allowance of the application with amended claims is earnestly solicited.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'Ira J. Schultz', is written over the typed name.

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